

# Comparisons of Job Characteristics

**Focus Occupation: Biological Technicians (19-4021)**

**Associated Occupation: Microbiologists (19-1022)**

[Compare Knowledge](#)

[Compare Skills](#)

[Compare Abilities](#)

[Compare Detailed Work Activities](#)

[Compare Tools and Technologies](#)

<<	Focus occupation element is much lower
<	Focus occupation element is lower
0	Focus occupation element is at a similar level
>	Focus occupation element is at a higher level
>>	Focus occupation element is at a much higher level

## Knowledge

Similarity of Focus Occupation to Associated Occupation: 95

**Focus Occupation: Biological Technicians (19-4021)**

**Associated Occupation: Microbiologists (19-1022)**

Associated Occupation's Key Knowledge Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Biology	3.7	24.1	18.9	<<	Extensive education and/or training may be required
English Language	11.2	16.6	10.5	<<	Extensive education and/or training may be required
Chemistry	4.8	15.2	13.5	<	Expanded education and/or training may be required
Medicine and Dentistry	3.7	10.7	4.1	<<	Extensive education and/or training may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Skills

Similarity of Focus Occupation to Associated Occupation: 84

**Focus Occupation: Biological Technicians (19-4021)**

**Associated Occupation: Microbiologists (19-1022)**

Associated Occupation's Key Skills Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating		Evaluation of Focus Occupation
Science	4.5	17.0	11.2	<<	Extensive development of skills in this area may be required
Reading Comprehension	10.7	15.5	14.1	0	Current skill level may be sufficient
Critical Thinking	10.8	15.0	12.3	<	A higher skill level may be required
Writing	9.2	14.8	10.1	<<	Extensive development of skills in this area may be required
Active Learning	8.7	14.7	10.1	<<	Extensive development of skills in this area may be required
Learning Strategies	7.2	12.2	6.4	<<	Extensive development of skills in this area may be required
Mathematics	6.2	11.0	9.4	<	A higher skill level may be required

Management of Personnel Resources	6.9	10.6	4.7	<<	Extensive development of skills in this area may be required
Systems Analysis	6.5	10.6	8.3	<	A higher skill level may be required
Systems Evaluation	6.4	9.9	7.2	<<	Extensive development of skills in this area may be required
Operations Analysis	5.0	8.8	4.1	<<	Extensive development of skills in this area may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Abilities		Similarity of Focus Occupation to Associated Occupation: 95			
Focus Occupation: Biological Technicians (19-4021) Associated Occupation: Microbiologists (19-1022)					
Associated Occupation's Key Abilities Elements	Average Rating, All Occupations	Associated Occupation's Rating	Focus Occupation's Rating	Evaluation of Focus Occupation	
Inductive Reasoning	10.2	18.0	12.6	<<	Extensive improvement in abilities may be required
Written Comprehension	11.0	16.5	11.8	<<	Extensive improvement in abilities may be required
Problem Sensitivity	11.1	16.1	11.3	<<	Extensive improvement in abilities may be required
Category Flexibility	9.0	16.0	11.5	<<	Extensive improvement in abilities may be required
Deductive Reasoning	10.6	15.7	11.7	<<	Extensive improvement in abilities may be required
Written Expression	9.8	15.5	11.6	<<	Extensive improvement in abilities may be required
Near Vision	11.1	15.0	13.9	0	Current ability level may be sufficient
Information Ordering	9.9	13.9	12.3	<	Some improvement in abilities may be required
Flexibility of Closure	7.8	13.6	10.0	<<	Extensive improvement in abilities may be required
Fluency of Ideas	7.6	12.8	9.7	<<	Extensive improvement in abilities may be required

The maximum possible rating is 25.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

Activities that Both Occupations Have in Common		Similarity of Focus Occupation to Associated Occupation: 94
Focus Occupation: Biological Technicians (19-4021) Associated Occupation: Microbiologists (19-1022)		
Work Activities	Exclusivity of Activity	
Adhere to safety procedures	12	
Analyze biological research, test, or analysis data	70	
Analyze scientific research data or investigative findings	27	

Collect scientific or technical data	30
Collect statistical data	47
Communicate technical information	4
Conduct analyses or tests of organic compounds	71
Conduct field research or investigative studies	52
Conduct laboratory research or experiments	57
Conduct standardized qualitative laboratory analyses	62
Conduct standardized quantitative laboratory analyses	62
Cultivate micro-organisms for study, testing, or medical preparations	84
Develop or maintain databases	30
Develop tables depicting data	33
Direct and coordinate activities of workers or staff	3
Examine biological or other material specimens under microscope	73
Explain complex mathematical information	30
Follow infectious materials procedures	52
Follow microbiology procedures	74
Follow safe waste disposal procedures	50
Isolate and identify micro-organisms	82
Maintain records, reports, or files	5
Perform statistical analysis	71
Prepare biological specimens for examination	84
Prepare reports	8
Prepare sample for laboratory testing, analysis, or microscopy	74
Prepare technical reports or related documentation	22
Prepare vaccines, biologicals, or serums	85
Recognize plant diseases	72
Recognize tree or forest plant species	78
Record test results, test procedures, or inspection data	48
Research human or animal disease	77
Use biological research techniques	68
Use biological testing instruments	73
Use chemical testing or analysis procedures	54
Use computers to enter, access or retrieve data	3
Use hazardous materials information	35
Use health or sanitation standards	62
Use knowledge of investigation techniques	16
Use laboratory equipment	60
Use mathematical or statistical methods to identify or analyze problems	30
Use microscope	71
Use nutrition research techniques	81
Use quantitative research methods	35
Use relational database software	26
Use scientific research methodology	21
Use spreadsheet software	18
Use word processing or desktop publishing software	17

Not all positions in these occupations will necessarily perform all of the listed activities. The exclusivity rating is an indication of how unique the activity is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations engage in that activity.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.

## Tools and Technologies that Both Occupations Have in Common

Similarity of Focus  
Occupation to Associated  
Occupation: 84

**Focus Occupation: Biological Technicians (19-4021)**

**Associated Occupation: Microbiologists (19-1022)**

Tools and Technologies	Exclusivity
Autoclave and sterilizer equipment and accessories	12
Chemical evaluation instruments and supplies	10
Chromatographic measuring instruments and accessories	16
Clinical and diagnostic analyzers and accessories and supplies	18
Computer printers	2
Computers	1
Content authoring and editing software	1
Data management and query software	1
Electrochemical measuring instruments and accessories	9
General laboratory glassware and plasticware and supplies	13
Histology equipment	35
Indicating and recording instruments	2
Industry specific software	1
Information exchange software	1
Laboratory baths	24
Laboratory blending and dispersing and homogenizing equipment and supplies	27
Laboratory centrifuges and accessories	13
Laboratory cooling equipment	25
Laboratory decanting and distilling and evaporating and extracting equipment and supplies	19
Laboratory electrophoresis and blotting system and supplies	26
Laboratory enclosures and accessories	17
Laboratory environmental conditioning equipment	24
Laboratory filtering equipment and supplies	51
Laboratory heating and drying equipment	13
Laboratory incubating equipment	20
Laboratory mixing and stirring and shaking equipment and supplies	19
Laboratory ovens and accessories	15
Laboratory washing and cleaning equipment	35
Laboratory water purification equipment and supplies	29
Pipettes and liquid handling equipment and supplies	16
Respiratory protection	6
Spectroscopic equipment	10
Test Tubes	26
Tissue culture and high throughput screening supplies	31
Viewing and observing instruments and accessories	4
Weight measuring instruments	7

Not all positions in these occupations will necessarily use all of the listed tools and technologies. The exclusivity rating is an indication of how unique the tool or technology is amongst all occupations. The maximum rating is 100. High scores indicate that only a small number of occupations use that tool or technology.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section analysis of O\*NET (Occupation Information Network) data.